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* * * * * Welcome to STN International * * * * *

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NEWS 6 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and
ZCAPLUS
NEWS 7 Apr 22 BIOSIS Gene Names now available in TOXCENTER
NEWS 8 Apr 22 Federal Research in Progress (FEDRIP) now available
NEWS 9 Jun 03 New e-mail delivery for search results now available
NEWS 10 Jun 10 MEDLINE Reload
NEWS 11 Jun 10 PCTFULL has been reloaded
NEWS 12 Jul 02 FOREGE no longer contains STANDARDS file segment
NEWS 13 Jul 22 USAN to be reloaded July 28, 2002;
saved answer sets no longer valid
NEWS 14 Jul 29 Enhanced polymer searching in REGISTRY
NEWS 15 Jul 30 NETFIRST to be removed from STN
NEWS 16 Aug 08 CANCERLIT reload
NEWS 17 Aug 08 PHARMAMarketLetter(PHARMAML) - new on STN
NEWS 18 Aug 08 NTIS has been reloaded and enhanced
NEWS 19 Aug 19 Aquatic Toxicity Information Retrieval (AQUIRE)
now available on STN
NEWS 20 Aug 19 IFIPAT, IFICDB, and IFIUDB have been reloaded
NEWS 21 Aug 19 The MEDLINE file segment of TOXCENTER has been reloaded
NEWS 22 Aug 26 Sequence searching in REGISTRY enhanced
NEWS 23 Sep 03 JAPIO has been reloaded and enhanced
NEWS 24 Sep 16 Experimental properties added to the REGISTRY file
NEWS 25 Sep 16 CA Section Thesaurus available in CAPLUS and CA
NEWS 26 Oct 01 CASREACT Enriched with Reactions from 1907 to 1985
NEWS 27 Oct 21 EVENTLINE has been reloaded
NEWS 28 Oct 24 BEILSTEIN adds new search fields
NEWS 29 Oct 24 Nutraceuticals International (NUTRACEUT) now available on
STN
NEWS 30 Oct 25 MEDLINE SDI run of October 8, 2002
NEWS 31 Nov 18 DKILIT has been renamed APOLLIT
NEWS 32 Nov 25 More calculated properties added to REGISTRY
NEWS 33 Dec 02 TIBKAT will be removed from STN
NEWS 34 Dec 04 CSA files on STN
NEWS 35 Dec 17 PCTFULL now covers WP/PCT Applications from 1978 to date
NEWS 36 Dec 17 TOXCENTER enhanced with additional content
NEWS 37 Dec 17 Adis Clinical Trials Insight now available on STN
NEWS 38 Dec 30 ISMEC no longer available

NEWS 39 Jan 13 Indexing added to some pre-1967 records in CA/CAPLUS
 NEWS 40 Jan 21 NUTRACEUT offering one free connect hour in February 2003
 NEWS 41 Jan 21 PHARMAML offering one free connect hour in February 2003
 NEWS 42 Jan 29 Simultaneous left and right truncation added to COMPENDEX,
 ENERGY, INSPEC
 NEWS 43 Feb 13 CANCERLIT is no longer being updated
 NEWS 44 Feb 24 METADEX enhancements
 NEWS 45 Feb 24 PCTGEN now available on STN
 NEWS 46 Feb 24 TEMA now available on STN
 NEWS 47 Feb 26 NTIS now allows simultaneous left and right truncation
 NEWS 48 Feb 26 PCTFULL now contains images

NEWS EXPRESS January 6 CURRENT WINDOWS VERSION IS V6.01a,
 CURRENT MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
 AND CURRENT DISCOVER FILE IS DATED 01 OCTOBER 2002
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* * * * * STN Columbus * * * * *

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=> file reg

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|----------------------|------------|---------|
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| | ENTRY | SESSION |
| FULL ESTIMATED COST | 0.21 | 0.21 |

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STRUCTURE FILE UPDATES: 26 FEB 2003 HIGHEST RN 495373-62-1

DICTIONARY FILE UPDATES: 26 FEB 2003 HIGHEST RN 495373-62-1

TSCA INFORMATION NOW CURRENT THROUGH MAY 20, 2002

Please note that search-term pricing does apply when

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Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> e pentosan/cn

| | | |
|-------|-------|---|
| E1 | 1 | PENTOS-4-ULOSE, 5-DEOXY-/CN |
| E2 | 1 | PENTOS-4-ULOSE, 5-DEOXY-2,3-O-(1-METHYLETHYLIDENE)-/CN |
| E3 | 0 --> | PENTOSAN/CN |
| E4 | 1 | PENTOSAN POLYSULFATE SODIUM/CN |
| E5 | 1 | PENTOSANASE/CN |
| E6 | 2 | PENTOSE/CN |
| E7 | 1 | PENTOSE (RIBULOSE)-5-PHOSPHATE-3-EPIMERASE (MESORHIZOBIUM |
| LO | | |
| | | TI STRAIN MAFF303099 GENE MLR4760)/CN |
| E8 | 1 | PENTOSE 5-PHOSPHATE 3-EPIMERASE (ALCALIGENES EUTROPHUS |
| MEGAP | | |
| | | LASMID PHG1 REDUCED)/CN |
| E9 | 1 | PENTOSE 5-PHOSPHATE 3-EPIMERASE (ALCALIGENES EUTROPHUS |
| REDUC | | |
| | | ED)/CN |
| E10 | 1 | PENTOSE KINASE (SINORHIZOBIUM MELILOTI GENE SMC02334)/CN |
| E11 | 1 | PENTOSE KINASE (SINORHIZOBIUM MELILOTI GENE SMC02335)/CN |
| E12 | 1 | PENTOSE MONOPHOSPHATE/CN |

=> file caplus

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|----------------------|------------------|---------------|
| FULL ESTIMATED COST | 0.40 | 0.61 |

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FILE COVERS 1907 - 28 Feb 2003 VOL 138 ISS 10
 FILE LAST UPDATED: 27 Feb 2003 (20030227/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s pentosan

L1 3123 PENTOSAN

=> d l1 ibib abs hitstr 1-5

L1 ANSWER 1 OF 3123 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:122104 CAPLUS

TITLE: Manufacture of sorbents from **pentosan**
-bearing raw materials and their usage

AUTHOR(S): Korotkova, L. N.; Chabibullin, R. R.; Denisenko, T.
V.

CORPORATE SOURCE: Ufa State University of Service, Ufa, 450015, Russia
SOURCE: Bashkirskii Khimicheskii Zhurnal (2002), 9(2), 33-35
CODEN: BKZHFU; ISSN: 0869-8406

PUBLISHER: Izdatel'stvo "Reaktiv"

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Sorbent has been manufd. from **pentosan**-bearing raw materials
waste through annealing. Its interstitial characteristics have been
detd.
by means of small angle X-ray scattering. Products adsorption from
Solanum tuberosum and Allium sulfur L. exts. has been carefully studied.

L1 ANSWER 2 OF 3123 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:65193 CAPLUS

TITLE: Optimisation for the separation of the
oligosaccharide, sodium **Pentosan** Polysulfate
by reverse polarity capillary zone electrophoresis
using a central composite design

AUTHOR(S): Prochazka, S.; Mulholland, M.; Lloyd-Jones, A.
CORPORATE SOURCE: Sydney, Materials and Forensic Science, Department of
Chemistry, University of Technology, P.O. Box 123,
Broadway, NSW 2001, Australia

SOURCE: Journal of Pharmaceutical and Biomedical Analysis
(2003), 31(1), 133-141
CODEN: JPBADA; ISSN: 0731-7085

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The sepn. by reverse polarity capillary zone electrophoresis of the
therapeutically developed sodium salt of **Pentosan** Polysulfate
was optimized through the anal. of response surface methodologies,
modeled
using a central composite design. The optimization investigated
injection
pressure, injection time and voltage and the effect of the conditions on
retention times, peak areas, sepn. efficiency and the method sensitivity.
The overall goal was to develop the most sensitive results with no
decrease in sepn. efficiency. The following results were obtained: (1)
retention times generally decreased as injection pressure, injection time
and voltage increased, injection time having the least effect; (2) as
expected peak areas increased as injection pressure and injection time
increased but decreased as voltage increased; (3) sepn. efficiencies
generally increased as injection pressure and injection time decreased,
with voltage having almost no effect. For the optimum condition, the

sample was introduced at the inlet vial at the cathode hydrodynamically, at optimal setting of 44 s at 35 mbar. The optimal voltage was -20 kV. In comparison with other methods, the optimum showed increased sensitivity, resoln. and sepn. efficiency. Repeatability studies were performed on the optimum parameter conditions. Relative std. deviation values obtained were between 0.9 and 5.4%.

L1 ANSWER 3 OF 3123 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:65188 CAPLUS

TITLE: Biosensor analysis of the molecular interactions of **pentosan** polysulfate and of sulfated glycosaminoglycans with immobilized elastase, hyaluronidase and lysozyme using surface plasmon resonance (SPR) technology

AUTHOR(S): Shen, Bojiang; Shimmon, Susan; Smith, Margaret M.; Ghosh, Peter

CORPORATE SOURCE: University Clinic, Level 5, Institute of Bone and Joint Research, Royal North Shore Hospital of Sydney, St. Leonards, NSW 2065, Australia

SOURCE: Journal of Pharmaceutical and Biomedical Analysis (2003), 31(1), 83-93
CODEN: JPBADA; ISSN: 0731-7085

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB **Pentosan** polysulfate (NaPPS) and chondroitin sulfates (ChSs) have recently been shown to exhibit both symptom and disease modifying activities in osteoarthritis (OA), but their resp. mechanisms of action are still the subject of conjecture. Excessive catabolism of joint articular cartilage is considered to be responsible for the initiation

and

progression of OA but the abilities of these drugs to mitigate this process has received only limited attention. Human neutrophil elastase (HNE) is a proteinase, which can degrade the collagens and proteoglycans (PGs) of the cartilage directly or indirectly by activating latent matrix metalloproteinases. Hyaluronidase (HAase) is an endoglycosidase, which degrades glycosaminoglycans including hyaluronan, which provides the aggregating component of the PG aggrecan complex. In the present study the mol. interactions between the NaPPS, ChSs and some other sulfated polysaccharides with immobilized HNE, HAase or lysozyme (a cationic protein implicated in PG metab.) were studied using a SPR biosensor device-BIAcore2000. The above three enzymes were covalently immobilized to a biosensor chip CM5 sep. using amine coupling. The binding affinity of each sulfated polysaccharide and the kinetics of NaPPS over the concn. range of 0.3-5.0 $\mu\text{g/mL}$ were detd. The inhibition of HNE by the sulfated polysaccharides as detd. using the synthetic substrate succinyl-Ala-Ala-Val-nitroanilide (SAAVNA) in a functional assay was compared with their resp. binding affinities for this proteinase using

the

BIAcore system. The results obtained with the two independent techniques showed good correlation and indicated that the degree and ring positions of oligosaccharide sulfation were major determinants of enzyme inhibitory activity. The obsd. difference in order of binding affinities of the drugs to the immobilized HNE, HAase and lysozyme suggests a

conformational

relationship, in addn. to the charge interactions between the sulfate

esters of the polysaccharides and the cationic amino acids of the enzymes.

Significantly, the SPR biosensor technol. demonstrated that small differences among sulfated polysaccharides, even subtle variations among different NaPPS batches, could be readily detected. The SPR technol. therefore offers not only a sensitive and reproducible method for ranking noncompetitive enzyme inhibitors for drug discovery but a rapid and quant.

bioassay for monitoring batch consistency of manuf.

L1 ANSWER 4 OF 3123 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:57415 CAPLUS

TITLE: P. psyllium-g-polyacrylonitrile: synthesis and characterization

AUTHOR(S): Mishra, Anuradha; Srinivasan, Rajani; Gupta, Ramkumar

CORPORATE SOURCE: CSJM University, 208 024

SOURCE: Colloid and Polymer Science (2003), 281(2), 187-189

CODEN: CPMSB6; ISSN: 0303-402X

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB P. psyllium mucilage, an anionic natural polysaccharide consisting of **pentosan** and uronic acid obtained from the seeds of Plantago psyllium (Plantago family), was grafted with acrylonitrile (AN). Graft copolymers were prepd. by grafting acrylonitrile onto P. psyllium mucilage

(PSY) using ceric ion initiated soln. polymn. technique for the very first

time. The influence of varying concn. of (AN) and ceric ammonium nitrate (CAN) on graft copolymn. was studied. The percent grafting was found to be affected by the concns. of AN and CAN in the reaction mixt. The prepd.

copolymers were not sol. in any common solvent or mixt. of solvents. The prepd. copolymers were characterized by FTIR.

L1 ANSWER 5 OF 3123 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2003:45766 CAPLUS

TITLE: Purification and composition analysis of pentosans from wheat bran

AUTHOR(S): Zheng, Xueling; Yao, Huiyuan

CORPORATE SOURCE: School of Food Science and Technology, Southern Yangtze University, Wuxi, 214036, Peop. Rep. China

SOURCE: Wuxi Qinggong Daxue Xuebao (2002), 21(4), 332-335

CODEN: WQDXF3; ISSN: 1009-038X

PUBLISHER: Wuxi Qinggong Daxue Xuebao Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB In order to obtain homogenous fractions, water sol. pentosans (WSP) and water insol. pentosans (AEP) prepd. from wheat bran were fractionated by stepwise ethanol pptn. and DEAE-cellulose column chromatograph. The compn. of each **pentosan** was analyzed. The results showed that with the gradual increase of ethanol concn., Ara/Xyl ratio of obtained fractions from WSP and AEP was raised, indicating a high branch degree of pantosans. WSP were purified into two fractions, and AEP were purified into three fractions upon DEAE-cellulose column chromatog. The fractions eluted with NaCl had higher branch degree and higher mol. wt. than the

fractions eluted with water.

=> d 5-10 ibib abs hitstr

L1 ANSWER 5 OF 3123 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:45766 CAPLUS
TITLE: Purification and composition analysis of pentosans
from wheat bran
AUTHOR(S): Zheng, Xueling; Yao, Huiyuan
CORPORATE SOURCE: School of Food Science and Technology, Southern
Yangtze University, Wuxi, 214036, Peop. Rep. China
SOURCE: Wuxi Qinggong Daxue Xuebao (2002), 21(4), 332-335
CODEN: WQDXF3; ISSN: 1009-038X
PUBLISHER: Wuxi Qinggong Daxue Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB In order to obtain homogenous fractions, water sol. pentosans (WSP) and
water insol. pentosans (AEP) prepd. from wheat bran were fractionated by
stepwise ethanol pptn. and DEAE-cellulose column chromatograph. The
compn. of each **pentosan** was analyzed. The results showed that
with the gradual increase of ethanol concn., Ara/Xyl ratio of obtained
fractions from WSP and AEP was raised, indicating a high branch degree of
pantosans. WSP were purified into two fractions, and AEP were purified
into three fractions upon DEAE-cellulose column chromatog. The fractions
eluted with NaCl had higher branch degree and higher mol. wt. than the
fractions eluted with water.

L1 ANSWER 6 OF 3123 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:30613 CAPLUS
TITLE: Potentiation of carbon tetrachloride hepatotoxicity
by
pentosan polysulfate in rats
AUTHOR(S): Zim, M. C. A.; Silveira, T. R.; Schwartzmann, G.;
Cerski, T.; Motta, A.
CORPORATE SOURCE: Hospital da Crianca Santo Antonio, Santa Casa de
Misericordia de Porto Alegre, Universidade Federal do
Rio Grande do Sul, Porto Alegre, Brazil
SOURCE: Brazilian Journal of Medical and Biological Research
(2002), 35(11), 1339-1346
CODEN: BJMRDK; ISSN: 0100-879X
PUBLISHER: Associacao Brasileira de Divulgacao Cientifica
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Few data are available in the literature regarding the effect of
pentosan polysulfate (PPS) on normal and fibrotic rat livers. In
addn., the combination of PPS and carbon tetrachloride (CCl4) has not
been
studied so far. The objective of this study was to assess the effect of
PPS on rat livers treated or not with CCl4 for the induction of liver
fibrosis. The study consisted of four stages: 1) hepatic fibrosis
induction with CCl4 (N = 36 rats); 2) evaluation of the effect of PPS on
CCl4-induced hepatic fibrosis (N = 36 rats); 3) evaluation of the effect
of higher doses of PPS in combination with CCl4 (N = 50 rats); 4)
evaluation of the presence of an enzymic inductor effect by PPS (N = 18
rats) using the sodium pentobarbital test which indirectly evaluates

hepatic microsomal enzyme activity in vivo. Adult (60 to 70 days) male Wistar rats weighing 180 to 220 g were used. All animals receiving 0.5 mL 8% CCl₄ (N = 36) developed hepatic fibrosis, and after 8 wk they also developed cirrhosis. No delay or prevention of hepatic fibrosis was obsd. with the administration of 5 mg/kg PPS (N = 8) and 1 mg/kg PPS (N = 8) 1 h after the administration of CCl₄, but the increased hepatotoxicity resulting from the combination of the two substances caused massive hepatic necrosis in most rats (N = 45). PPS (40 mg/kg) alone caused hepatic congestion only after 8 wk, but massive hepatic necrosis was again obsd. in assocn. with 0.5 mL CCl₄ after 1 to 4 wk of treatment. Unexpectedly, sleeping time increased with time of PPS administration (1, 2, or 3 wk). This suggests that PPS does not function as an activator of the hepatic microsomal enzymic system. Further studies are necessary in order to clarify the unexpected increase in hepatotoxicity caused by the combination of CCl₄ and high doses of PPS, which results in massive hepatic necrosis.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L1 ANSWER 7 OF 3123 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:9944 CAPLUS
DOCUMENT NUMBER: 138:55018
TITLE: Heat-denatured wheat flour giving high-viscosity suspensions, and its use as food material and products
INVENTOR(S): Iriki, Norio; Yamauchi, Hiroaki; Nishio, Zenta; Takada, Kanenori; Kuwahara, Tatsuo; Kawahara, Shuji; Nagano, Takayuki
PATENT ASSIGNEE(S): Nogyo Gijutsu Kenkyu Kiko, Japan; Yokoyama Seifun K. K.
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|--|------|----------|-----------------|----------|
| JP 2003000165 | A2 | 20030107 | JP 2001-189880 | 20010622 |
| PRIORITY APPLN. INFO.: | | | JP 2001-189880 | 20010622 |
| AB Title flour, useful for thickener-free batter, bakery products, confectionery, and pasta, is obtained by heating 10 g wheat flour with water content 13.5% at 90.degree. for 2 h in a heat-resistant Al-laminated bag so that the viscosity of a suspension contg. 31.5% of the denatured flour shows .gtoreq.800 mPa-s at 25.degree.. Thus, Horoshiri wheat flour was heat-denatured and showed a strong pos. correlation between its pentosan content and viscosity of its suspension. | | | | |

L1 ANSWER 8 OF 3123 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2003:3669 CAPLUS
TITLE: A rheological study of wheat starch-water-soluble
pentosan mixtures under hydrothermal gelling
conditions
AUTHOR(S): Santos, D. M. J.; Gama, A. C.; Da Silva, J. A. Lopes
CORPORATE SOURCE: Dept. de Quimica, Univ. of Aveiro, Aveiro, 3810-193,
Port.
SOURCE: Journal of Food Science (2002), 67(9), 3372-3380
CODEN: JFDSA; ISSN: 0022-1147
PUBLISHER: Institute of Food Technologists
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Heterogeneous water-sol. pentosans (WSP) were extd. from 2 different
wheat
flours. The dynamic rheol. behavior of starch-WSP mixts. was
investigated
to elucidate the effect of WSP on starch gelatinization and quenching the
starch gels. In general, WSP had a detrimental effect on starch
gelation.
The decrease of water availability due to WSP may explain the obsd.
higher
onset temp. for starch gelatinization. However, the obsd. changes in
rheol. behavior during cooling and aging, and the more pronounced effects
obsd. at excess water, suggest dependence on the WSP source and that WSP
may have a more specific interacting effect with the amylose and/or
amylopectin which prevents reorganization of both macromols. within the
starch network.
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR
THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

L1 ANSWER 9 OF 3123 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2002:976994 CAPLUS
DOCUMENT NUMBER: 138:76003
TITLE: Mechanism and significance of tar formation and tar
removal during thermochemical conversion of solid
carbonaceous materials
AUTHOR(S): Unger, Ch. A.; Ising, M.
CORPORATE SOURCE: Fraunhofer-Institut fuer Umwelt, Sicherheits- und
Energietechnik UMSICHT, Oberhausen, Germany
SOURCE: DGMK Tagungsbericht (2002), 2002-2(Beitraege zur
DGMK-Fachbereichstagung "Energetische Nutzung von
Biomassen", 2002), 131-142
CODEN: DGTA7; ISSN: 1433-9013
PUBLISHER: Deutsche Wissenschaftliche Gesellschaft fuer Erdoel,
Erdgas und Kohle
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The formation of tar during the pyrolysis of wood is highlighted, and the
tar compn. was compared to the tars achieved by the pyrolysis of hard
coal
and lignite. At low pyrolysis temps. primary oxygen-rich tars were
achieved from cellulose, hemicellulose and **pentosan**, while at
higher pyrolysis temps., in the presence of O2 or H2O, secondary tars
were

formed that consisted on arom. hydrocarbons. At temps. >850.degree. tertiary tars were achieved by the recombination of energy-rich mol. fragments. The utilization of the resulting tars from biomass pyrolysis is discussed, as well as the disadvantages of the tars for the direct use of the pyrolysis gas. While CO in the raw gas had the highest toxicol. potential, the carcinogenic potential of polyarom. hydrocarbons in the tars had also to be considered.

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L1 ANSWER 10 OF 3123 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2002:952945 CAPLUS
 TITLE: Electrochemical assay of protease activities based on polycation/polyanion complex as substrate and polyanion sensitive membrane electrode detection
 AUTHOR(S): Abd-Rabboh, Hisham S. M.; Nevins, Stacey A.; Durust, Nedime; Meyerhoff, Mark E.
 CORPORATE SOURCE: Department of Chemistry, The University of Michigan, Ann Arbor, MI, 48109-1055, USA
 SOURCE: Biosensors & Bioelectronics (2003), 18(2-3), 229-236
 CODEN: BBIOE4; ISSN: 0956-5663
 PUBLISHER: Elsevier Science Ltd.
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A novel electrochem. method to detect protease activities is demonstrated.

The assay is based on the use of a macromol. polycation/polyanion substrate; specifically, a complex of the arginine-rich peptide protamine and **pentosan** polysulfate (PPS), a highly sulfated polysaccharide. As the protease of interest cleaves the protamine within the complex into smaller fragments, free PPS is generated and detected potentiometrically via a polyanion sensitive membrane electrode. Thus, the rate of free PPS generation is proportional to the activity of the protease in the assay soln. The effect of the substrate concn. is examd.,

as is the influence of the protamine/PPS stoichiometry on the assay performance. Using the optimized compn. and concn. of the complex, the detn. of trypsin at levels down to 5 U/mL and plasmin at levels approaching 0.002 U/mL can be achieved in a 10 min period. The prospects of further adapting this scheme to det. clot-busting plasminogen activators (e.g. streptokinase, tissue plasminogen activator, etc.) in samples as complex in whole blood are discussed.

=> s process for preparing furfural

1776014 PROCESS
 30517 PREPARING
 18673 FURFURAL

L2 1 PROCESS FOR PREPARING FURFURAL
 (PROCESS (1W) PREPARING (W) FURFURAL)

=> d 12 all

L2 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS

AN 1989:137352 CAPLUS
 DN 110:137352
 TI **process** for **preparing furfural** from bagasse
 IN Barbe, Claude Edouard; Gordo, Oscar; Jollez, Paul Antoine Henri;
 Tognetti,
 Joao Batista; Bufo, Moacir Jose
 PA Rhodia S. A., Brazil
 SO Braz. Pedido PI, 26 pp.
 CODEN: BPXXDX
 DT Patent
 LA Portuguese
 IC ICM C07D307-48
 CC 43-9 (Cellulose, Lignin, Paper, and Other Wood Products)
 Section cross-reference(s): 45

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|--|------|----------|-----------------|----------|
| | ----- | --- | ----- | ----- | ----- |
| PI | BR 8605461 | A | 19880531 | BR 1986-5461 | 19861031 |
| PRAI | BR 1986-5461 | | 19861031 | | |
| AB | Furfural is prepd. from 100 parts bagasse by using 0.8-2.0 parts mixt. of sulfuric acid and phosphoric acid as digestion catalyst with 70-300 parts steam at 170-220.degree. and 8.0-12.0 kg/cm2. Bagasse was treated with 2.0% 31:69 H2SO4-H3PO4 mixt. and steam at 180.degree. and 10 kg/cm2 for 180 min to give furfural at % conversion (based on theor.) 65.6, vs. 56.6 and 59.2 for H2SO4 alone and H3PO4 alone, resp. | | | | |
| ST | furfural prepn bagasse digestion; sulfuric phosphoric bagasse digestion catalyst; conversion furfural bagasse digestion | | | | |
| IT | Bagasse (for furfural prepn., using sulfuric acid-phosphoric acid mixt. catalyst) | | | | |
| IT | Digestion, chemical (of bagasse, for furfural prepn., acid mixt. catalyst for) | | | | |
| IT | Hydrolysis catalysts (sulfuric and phosphoric acids, for furfural prepn. from bagasse) | | | | |
| IT | 7664-93-9P, Sulfuric acid, uses and miscellaneous RL: IMF (Industrial manufacture); PREP (Preparation) (mixt. with phosphoric acid, catalyst, for furfural prepn. from bagasse) | | | | |
| IT | 7664-38-2P, Phosphoric acid, uses and miscellaneous RL: IMF (Industrial manufacture); PREP (Preparation) (mixt. with sulfuric acid, catalysts, for furfural prepn. from bagasse) | | | | |
| IT | 98-01-1P, Furfural, preparation RL: IMF (Industrial manufacture); PREP (Preparation) (prepn. of, from bagasse, sulfuric-phosphoric acid mixt. catalyst for) | | | | |

L3 ANSWER 1 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:608693 CAPLUS

DOCUMENT NUMBER: 138:124164

TITLE: Improved purification of hydrolyzates from
pentosan-containing plant materials
used for xylitol production

AUTHOR(S): Vyglazov, V. V.; Ploshko, E. A.; Elkin, V. A.

CORPORATE SOURCE: St. -Peterb. Gos. Lesotekh. Akad., St. Petersburg,
194021, Russia

SOURCE: Novye Dostizheniya v Khimii i Khimicheskoi
Tekhnologii

Rastitel'nogo Syr'ya, Materialy Vserossiiskogo
Seminara, Barnaul, Russian Federation, Mar. 28-29,
2002 (2002), 263-267. Editor(s): Bazina, L. I.;
Tyryshkina, N. Ya. Izdatel'stvo Altaiskogo
Universiteta: Barnaul, Russia.

CODEN: 69CYW5; ISBN: 5-7904-0197-X

DOCUMENT TYPE: Conference

LANGUAGE: Russian

AB Pentosan-contg. birch wood hydrolyzates used in xylitol prodn. were
purified by using flocculant C-498 immobilized on activated carbon.

L3 ANSWER 2 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:286280 CAPLUS

DOCUMENT NUMBER: 137:263615

TITLE: Structure, properties and polymerization of furan
monomers obtained by furfural-acetone condensation

AUTHOR(S): Muidinov, M. R.

CORPORATE SOURCE: Inst. Probl. Khim. Fiz., RAN, Chernogolovka, Russia

SOURCE: Tekhnika Mashinostroeniya (2002), (1), 16-31

CODEN: TMEAA9

PUBLISHER: Izdatel'stvo "Virazh-Tsentr"

DOCUMENT TYPE: Journal; General Review

LANGUAGE: Russian

AB A review discussing the prodn. of **furfural** from renewable raw
materials, such as waste **pentosan**-contg. lignocellulosic
materials such as wood and agricultural wastes, and the properties of
furan monomers, with special emphasis on **furfural**-acetone
condensation products, such as Monomer FA, Monomer FAM,
difurfurylideneacetone and furfurylideneacetone. Structure and polymn.

of
these monomers in prepn. of furan resins is described along with
elucidation of the effect of mol. structure of furan-based monomers on
oxidn. process, and miscibility of furan-based monomers with epoxy resins
in the prepn. of epoxy-furan resins.

L3 ANSWER 3 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:412999 CAPLUS

DOCUMENT NUMBER: 135:138946

TITLE: Furfural and levoglucosan production from deciduous
wood and agricultural wastes

AUTHOR(S): Gravitis, Janis; Vedernikov, Nikolay; Zandersons,
Janis; Kokorevics, Arnis

CORPORATE SOURCE: Institute of Advanced Studies, The United Nations
University, Tokyo, 150-8304, Japan

SOURCE: ACS Symposium Series (2001), 784 (Chemicals and
Materials from Renewable Resources), 110-122
CODEN: ACSMC8; ISSN: 0097-6156

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review, with 13 refs., on methods to increase **furfural** prodn.
and minimize cellulose destruction and as an alternative to the
conventional dil. acid process. Use of small amts. of strong catalysts
in

differential hydrolysis and dehydration reactions is discussed. The
process results in **furfural** yield increases from 55% to 75% and
the consumption of cellulose (wood) has diminished five-fold. The
development of the technol., including two-step selective catalysis of
wood and other **pentosan**-contg. raw materials is outlined.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR
THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L3 ANSWER 4 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2001:28054 CAPLUS
DOCUMENT NUMBER: 134:224289
TITLE: Gaseous acid catalysis: An intriguing new process
AUTHOR(S): Zeitsch, Karl J.
CORPORATE SOURCE: Koln, D-50935, Germany
SOURCE: Chemical Innovation (2001), 31(1), 40-44
CODEN: CINNFJ; ISSN: 1527-4799
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A gaseous acid catalysis process for the prodn. of **furfural** from
sugars (pentose or **pentosan**) using a H2O-HCl azeotrope is
reported.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L3 ANSWER 5 OF 368 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:610354 CAPLUS
DOCUMENT NUMBER: 133:165408
TITLE: Manufacture of furfural and acetic acid from
pentosan-containing plant sources
INVENTOR(S): Vedernikov, N. A.
PATENT ASSIGNEE(S): Russia
SOURCE: Russ. From: Izobreteniya 1998, (35), 287-88.
CODEN: RUXXE7
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------------------|------|----------|-----------------|------------------------|
| RU 2123497 | C1 | 19981220 | RU 1997-114726 | 19970825 |
| PRIORITY APPLN. INFO.: | | | RU 1997-114726 | 19970825 |
| AB | | | | Title only translated. |

L3 ANSWER 6 OF 368 CAPLUS COPYRIGHT 2003 ACS
ACCESSION NUMBER: 2000:573784 CAPLUS
DOCUMENT NUMBER: 133:165426
TITLE: Process for the manufacture of furfural
INVENTOR(S): Zeitsch, Karl J.
PATENT ASSIGNEE(S): Steiner, Philipp Daniel, S. Afr.
SOURCE: PCT Int. Appl., 15 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------|------|----------|-----------------|---|
| WO 2000047569 | A1 | 20000817 | WO 2000-ZA24 | 20000211 |
| W: | | | | AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, |

MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,
 TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,
 MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE,
 DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF,
 CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
 DE 19905655 A1 20000817 DE 1999-19905655 19990211
 EP 1161426 A1 20011212 EP 2000-912231 20000211
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO
 BR 2000008143 A 20020312 BR 2000-8143 20000211
 DE 1999-19905655 A 19990211
 WO 2000-ZA24 W 20000211
 PRIORITY APPLN. INFO.:
 AB The process is carried out by charging a reactor with **pentosan**
 -contg. material, heating by introduction of pressurized steam to a 1st
 predetd. temp. closing the inlet valve of the reactor, and subjecting the
 charge to a gradual redn. of pressure until a 2nd predetd. temp. is
 attained, the depressurization being at a rate sufficient to maintain the
 liq. phase within the reactor in a constantly ebullient state. An
 illustration of the delayed decompression process for the prodn. of
furfural is given.
 REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS
 RECORD. ALL CITATIONS AVAILABLE IN THE RE

FORMAT

L3 ANSWER 7 OF 368 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000:498752 CAPLUS
 DOCUMENT NUMBER: 133:75556
 TITLE: Method of producing **furfural** and acetic acid
 from **pentosan-containing** raw
 material in presence of acidic catalysts
 INVENTOR(S): Vedernikov, N. A.
 PATENT ASSIGNEE(S): Evsikova, Galina Nikolaevna, Russia
 SOURCE: Russ. From: Izobreteniya 1998, (17), 251.
 CODEN: RUXXE7
 DOCUMENT TYPE: Patent
 LANGUAGE: Russian
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---------------------------|------|----------|-----------------|----------|
| RU 2113436 | C1 | 19980620 | RU 1996-117717 | 19960830 |
| PRIORITY APPLN. INFO.: | | | RU 1996-117717 | 19960830 |
| AB Title only translated. | | | | |

L3 ANSWER 8 OF 368 CAPLUS COPYRIGHT 2003 ACS
 ACCESSION NUMBER: 2000:323755 CAPLUS
 DOCUMENT NUMBER: 133:44306
 TITLE: Preparation of silica gel/furfural polymer composites
 AUTHOR(S): Rodrigues Santa Rita, Josue; Paravidino Carneiro,
 Mayra; Bruno Tavares, Maria Ines; de Menezes, Sonia
 M.
 C.; Sanchez Rodriguez, Ruben
 CORPORATE SOURCE: Lab. Materiais Avancados, Univ. Estadual Norte
 Fluminense, Rio de Janeiro, 28015-620, Brazil

SOURCE: Congresso Anual - Associacao Brasileira de Metalurgia e Materiais (1999), Volume Date 1998, 53rd(53 Congresso de Tecnologia Metalurgica e Materiais), 1044-1054

CODEN: CAAMEU

PUBLISHER: Associacao Brasileira de Metalurgia e Materiais

DOCUMENT TYPE: Journal; (computer optical disk)

LANGUAGE: Portuguese

AB Furfural polymers were prepd. from sugarcane bagasse pentosans, by treatment with H₂SO₄ to induce cyclization and subsequent polymn. in presence of silica, which results in bonding of Si to polymer carbonyl moieties. The degree of bonding depends on the ratio of furfural/acid and the coverage of silica particles. The bonding of silica to the polymer was monitored using ²⁹Si NMR CP/MAS expts. The materials are of interest for use as stationary phases in chem. anal. methods.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

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L3 ANSWER 9 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:516996 CAPLUS

DOCUMENT NUMBER: 132:90211

TITLE: Capillary GLC method for determination of single pentosans of Pinus nigricans Host

AUTHOR(S): Vidrich, V.; Fusi, Pi.; Franci, M.; Michelozzi, M.

UTHOR(S): Vidrich, V.; Fusi, Pi.; Franci, M.; Michelozzi, M.
CORPORATE SOURCE: Dipartimento di Scienza del Suolo e Nutrizione della
Pianta, Universita di Firenze, Florence, Italy
SOURCE: Agrochimica (1999), 43(2), 101-104
CODEN: AGRCAX; ISSN: 0002-1857
PUBLISHER: Pacini Editore
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A capillary gaschromatog. method was developed to det. qual. and quant. the **pentosan** content in wood species of Italian forestry biomass. The proposed methodol. aims at detg. the compn. of the single components of pectins and hemicelluloses, arabinans and xylans. Wood samples of Pinus nigra Host. were prep'd. by acid hydrolysis with TFA (Trifluoroacetic acid) evapn. by Rotavapor dry over P2O5 and final silanization with Trisil (Pierce) before the gaschromatog. anal. The principle of official method is the conversion of the pentosans to **furfural** by hydrochloric acid and it ests. the total amt. of pentosans without a detn. of the individual sugars. The proposed method is advantageous because it is able to det. directly the pentosans and to discriminate between the individual sugar components.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE

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L3 ANSWER 10 OF 368 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:235226 CAPLUS

DOCUMENT NUMBER: 130:327183

TITLE: Comparison of steam and hot liquid water
pretreatments

AUTHOR(S): for the bioconversion of lignocellulosics to ethanol
Schulman, Deborah E.; Allen, Stephen; Lichwa, Joe;
Antal, Michael J., Jr.; Laser, Mark; Lynd, Lee

CORPORATE SOURCE: Hawaii Natural Energy Institute, University of Hawaii
at Manoa, Honolulu, HI, 96822, USA

SOURCE: Preprints of Symposia - American Chemical Society,
Division of Fuel Chemistry (1999), 44(2), 219-223
CODEN: PSADFZ; ISSN: 1521-4648

PUBLISHER: American Chemical Society, Division of Fuel Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB We focus on the effectiveness of pretreatment methods as measured by
their

solubilization, **pentosan** recoveries, inhibitor formation, and
solids concn. Results indicate that hot liq. water pretreatment
performed

better than steam pretreatment on the basis of sugar recovery,
hydrolyzate

inhibitor formation and solubilization. Explanation, accounting for
these

differences are related to the different thermochem. conditions, which
the

feed material encounters. These conditions can lead to vapor losses,
losses assoc'd. with recondensation, and carbohydrate breakdown. Addnl.,
shorter reaction times resulted in less xylose degrdn. and
furfural formation. Steam pretreatment performed better on the
basis of solids concn.

Page 2

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